

Application No.: 10/634,692
Filed: August 5, 2003
Burnett et al.
PRD-0023-USANP

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REMARKS

I. THE OBJECTION TO THE SPECIFICATION

The Office Action objects to the specification, asserting that the priority information needs to be cited therein. In response, Applicants submit that the amendment to the specification obviates any basis for the objection thereto. Reconsideration and withdrawal of the objection to the specification are respectfully requested.

II. THE REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects claims 4-13, 17, 18 and 21-33 under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 5,843,741 ("the '741 patent") to Wong et al. and U.S. Patent No. 5,134,070 ("the '070 patent") to Casnig. In particular, the Office Action asserts:

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to combine teachings from Wong et al. with those of Casnig to develop a method to determine the biological activity of a compound by adding said compound to a cell suspended in a vessel containing transparent dielectric material, wherein said vessel is equipped with an electrode to pass voltage through the material and the cell and to collect the optic responses through signals on to an imaging device because Wong et al. [disclose] a composition and a method where upon anchor dependent cells can grow, proliferate, differentiate and function on an electrically [conductive] polymer, wherein said polymer is biocompatible and Casnig teaches to culture cells in a device fitted with optically transparent electrically conductive coated electrode surfaces and measure/monitor changes in said cells upon applying electrical field through the electrodes.

Applicants respectfully traverse the rejection.

The cited references do not disclose or suggest the claimed invention. The claimed invention is a method of determining the biological activity of a candidate compound comprising: 1) introducing one or more cells in a liquid medium into a well of an electric field stimulation device, wherein the device comprises at least one transparent electrode disposed on a surface of a transparent bottom well; 2) labeling the cell with an optically detectable marker; 3) contacting the cell with a test compound; 4) exposing the cell to repetitive electric pulses supplied by the transparent electrode and a second electrode of opposing polarity, wherein said repetitive electric pulses are of about 250 to about 1000 μ s duration and about 1 to 100 pulses/s and about 2 to about 120 V amplitude, and produce a controlled

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change in a physiological response of the cell; 5) detecting an optical signal; and 6) comparing the signal with an optical signal measured from a cell that is not contacted with the candidate compound.

The '741 patent discloses a method for altering the proliferation, differentiation or function of anchorage dependent cells that includes associating the cells with a surface formed of an electrically conducting polymer and applying an effective voltage to change the oxidation state of the polymer without damaging the cells. See, e.g., col. 3, lines 19-25. The '070 patent discloses a method and device for culturing cell monolayer cultures on an electric surface so as to apply an electric field. See, e.g., Abstract. Neither of the cited references disclose or suggest a method for determining biological activity that involves "exposing the cell to repetitive electric pulses supplied by the transparent electrode and a second electrode of opposing polarity, wherein said repetitive electric pulses are of about 250 to about 1000 μ s duration and about 1 to 100 pulses/s and about 2 to about 120 V amplitude, and produce a controlled change in a physiological response of the cell", as claimed. As disclosed in the present specification, the claimed method involves the optimization of the electrical stimulation "to elicit a desired response in the stimulated cell and to avoid killing or overheating of the cell." See, e.g., page 19, line 20 to page 20, line 18. Reconsideration and withdrawal of the rejection are respectfully requested.

III. THE REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

The Office Action rejects claims 3-13, 17, 18 and 21-33 under 35 U.S.C. § 112, second paragraph, for use of the term "characterizing." In response, Applicants submit that the amendment to claim 3 obviates any basis for the rejection of claims 3-13, 17, 18 and 21-33 under 35 U.S.C. § 112, second paragraph. Reconsideration and withdrawal of the rejection of claims 3-13, 17, 18 and 21-33 under 35 U.S.C. § 112, second paragraph, are respectfully requested.

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IV. CONCLUSION

Early consideration and prompt allowance of the claims are respectfully requested. Should the Office require anything further, it is invited to contact Applicants' representative at the telephone number below.

Respectfully submitted,

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